SECTION 25 - VARICELLA ZOSTER (CHICKENPOX)

I. PURPOSE.

To prevent nosocomial varicella-zoster (V-Z, chickenpox) transmission.

II. POLICY.

Guidelines for the MEDDAC on varicella isolation and healthcare staff immunization requirements.

III. GENERAL.

Varicella-Zoster (Chicken Pox) is a highly contagious disease with serious implications in the hospital setting. Susceptible immunocompromised patients are particularly predisposed to such life-threatening complications as encephalitis and pneumonia. The disease is endemic in the United States; the majority of the population is exposed and infected during childhood, resulting in life-long immunity. Therefore, history of illness is generally assumed to imply immunity. In the event of lack of clear history of illness, immunity can be determined by a serum varicella titer. All DHCN personnel (whether involved in direct patient care or not) should know if they have immunity to Varicella-Zoster. Since the administration of the Varicella vaccine in the past decade, cases occur much less frequently.

IV. SPECIFIC

A. SIGNIFICANT EXPOSURE DEFINITION: Prolonged face to face contact, or contact of one hour or more indoors with an infectious individual. This includes:

* Continuous household contact
* Playmate contact - generally longer than one hour indoors
* Patients in the same 2-4 bed room, or adjacent beds in a large ward
* Newborn infants whose birth mother has onset of varicella seven (7)days or less before delivery or within seven (7) days after delivery
* Nursery exposures require evaluation by Hospital Infection Control Officer and Pediatric physician.

B. Respiratory secretions are infectious for 1-2 days prior to onset of lesions; therefore, healthcare personnel, ancillary staff, patients, and/or visitors exposed during that period must be informed of the exposure and evaluated for prior history of exposure/illness.

V. PROCEDURES

A. DHCN Personnel

1. Personnel with symptoms of Varicella must be evaluated as soon as symptoms occur. Standard occupational health policies regarding medical evaluation of military and civilian personnel should be followed. Civilian employees will be placed on sick leave and military personnel will be placed on convalescent leave when the diagnosis of varicella is confirmed by the physician.

2. Regardless of where the evaluation occurs (ETR, Occupational Health, clinic setting, or Sick Call), the health care providers must be informed of the nature of the illness immediately, so that appropriate isolation may be initiated. A mask must be worn by the infected employee while in the hospital. Persons suspected of having Varicella must not wait in the waiting room with other patients, and should be masked and placed in a private exam room with the door closed.

3. All diagnoses of Varicella-Zoster must be confirmed by a physician.

4. The Hospital Infection Control Officer (HICO) will be notified of any cases of known or suspected Varicella-Zoster to assist in expediting medical evaluation and initiate contact investigation and screening of potentially exposed personnel and patients.

B. HICO will:

1. Acquire from the supervisor a list of patients and personnel potentially exposed to varicella.

2. Interview the staff exposed to Varicella and obtain a history detailing their extent of exposure, their previous varicella history and titer results (if available) to determine susceptibility.

3. Evaluate which patients are at risk to develop the disease based on their age, diagnosis, immune status, length of exposure to the source patient, and prior history of varicella. A plan of action will be developed for each susceptible, exposed patient with the attending physician.

4. Those inpatients requiring isolation must be placed in airborne isolation rooms with negative air flow beginning the 10th day post exposure through the 21st day. If the exposed patient received Varicella Zoster Immune Globulin (VZIG), the period will extend from the 10th to the 28th day. Patient may be placed with other patients who have a prior history or positive titers for V-Z.

5. The patient who develops clinical symptoms of varicella will be transferred to a facility and placed on airborne isolation in a negative airflow room until all lesions are fully crusted over; no new vesicles have developed for 72 hours; or he/she is able to be discharged home - whichever comes first.

C. Handling of Exposed, Nonimmune DHCN personnel:

1. Occupational Health must be contacted by the COB on the day of notification of exposure to varicella to facilitate a timely completion of a list of exposed, susceptible staff members post exposure. If a varicella titer is required per the algorithm or the Occupational Health staff's evaluation, the employee must report to the phlebotomy lab for blood draw.

2. Exposed, susceptible (nonimmune) DHCN personnel with a documented negative titer for varicella will be evaluated to determine need for removal from duty during the incubation period (from the 10th through the 21st day following exposure), so that if the disease occurs, there will be no further exposure of DHCN personnel or patients. The Occupational Health physician will make the determination for removal from duty.

3. The vaccine may prevent or modify illness when administered within 3 to 5 days after exposure. The ACIP now recommends vaccination of susceptible persons who are eligible for vaccination as soon as possible after exposure--ideally within 3 days but possibly up to 5 days of an exposure--to prevent illness or modify disease severity. If a person has already been infected, and the vaccine is given soon enough, disease may be modified or prevented. If the person was infected >5 days prior to vaccination, there is unlikely to be any benefit from vaccination but vaccination is not known to be harmful. Finally, exposure even in a household setting does not result in transmission 100% of the time. So, if the exposed person has not been infected, vaccination will confer protection against subsequent exposures. For further information, visit the following site: http://www.cdc.gov/epo/mmwr/preview/mmwrhtml/rr4806a1.htm

4. Occupational Health will notify the employee of the lab results. If the employee is immune, no further action is required. If nonimmune, the employee and the supervisor will be notified of the time frame during which work restrictions will be enforced. Further guidance and information will be provided at that time.

5. Civilian personnel who are exposed and have a documented negative varicella titer will be seen by the Occupational Health physician to determine potential for developing varicella. If the physician determines significant exposure and susceptibility, the staff members will be removed from duty for the good of the hospital and will receive Workman's Compensation. Those who develop an active case of chicken pox will not return to duty until all lesions are crusted over or no new vesicles develop for 72 hours. Staff must be examined and cleared by Occupational Health before returning to duty.

D. Reference the algorithm for varicella - zoster exposure situation on the last page of this section.

E. Active Duty Personnel

1. If the employee lives outside the barracks, place on convalescent leave at home.

2. If he/she lives in the barracks, place on convalescent leave from day 10 through day 21 after exposure. Instruct the patient to report to Occupational Health, Sick Call or the Emergency Treatment Room (after hours) at the first sign of fever, cough or lesions. If the employee returns with symptoms, handle as if it is a presumed active case of chicken pox.

3. The DHCS health care worker cannot return to duty until chicken pox has been ruled out by a physician.

4. Military personnel will not be admitted to this facility with the sole diagnosis of uncomplicated varicella. If admission is medically necessary, they will be transferred to the nearest military hospital with negative airflow rooms.

5. Personnel on convalescent leave for R/O varicella must be seen by the Occupational Health physician before reporting for duty after the 21st day post exposure.

F. Personnel removed from duty will be counseled as to activity restrictions, the signs and symptoms of Varicella-Zoster and potential complications (i.e., pneumonia and encephalitis).

G. In cases of exposure of hospitalized patients, the primary physician will be responsible for assessing the susceptibility of that patient and determining the course of action to be taken. Whenever possible, exposed susceptible patients should be discharged prior to the period when they might be infectious. If this is not possible, the patient must be placed in appropriate isolation for the period from the lOth to the 21st day following exposure.

H. Outpatients and patients discharged prior to identification of exposure will be evaluted on a case-by-case basis by the HICO to determine risk. The HICO will inform the responsible attending physician.

VI. PATIENT CARE ISSUES

A. Airborne Isolation is not needed if

1. the patient has a positive history/titer for varicella zoster

2. the patient will be discharged prior to the 10th day post exposure

3. Isolation in an airborne infection isolation room (AIIR)(a negative air flow room) is REQUIRED 10 days after exposure if:

a. the patient has a negative history/titer for varicella.

b. the patient is immunocompromised, or taking steroids.

c. infant whose birth mother had onset of varicella less than seven days before delivery, or seven days post-partum. Pediatric physician to evaluate the patient for possible administration of VZIG.

4. Isolation is required in an AIIR for any patient admitted with active varicella for a medically or surgically justified reason (elective admissions should be rescheduled!)

VII. PRECAUTIONS FOR PATIENTS ON VARICELLA ISOLATION

A. Request transfer to appropriate facility with negative air flow rooms.

B. Pending availability of transfer, keep door closed, and place "airborne isolation" sign on the door. Place a mask on the patient.

C. Supply the room to meet the needs of patients and staff.

D. Gloves and impervious gown are required for direct contact with any patient with active lesions. Linen gowns will not protect the healthcare worker's' skin or uniforms from the serum of active lesions.

E. Visitors and staff should be limited to immune persons. Susceptible healthcare staff will not enter the room.

F. Linen must be handled with care to prevent airborne dispersion and bagged on site. Feces, urine, needles, and blood products do not require special handling beyond Standard precautions.

G. Patients exposed on different dates to varicella should not be cohorted (placed in the same room) together because of varying levels of exposure. If two different exposures are cohorted, neither exposure may be returned to the general population until the last exposure has completed the incubation period.

H. Health care workers who **are not immune to Varicella Zoster will not** care for patients with varicella or disseminated herpes zoster infections.

VIII. Varicella Zoster Immune Globulin (VZIG) is available for passive immunity for high risk, susceptible individuals.

A. VZIG may be used in the following situations:

1. Immunocompromised patients (includes cancer, AIDS, premature infants)

2. Susceptible infants less than 6 months of age, adolescents, and adults (serologic determination is advised).

3. Infants of birth mothers who develop varicella seven days post delivery or less than seven days prior to delivery and/or susceptible infants/birth mothers to be discharged home where active varicella is present.

4. Pregnant, susceptible females in the first trimester.

5. Premature infants less than 28 weeks or less than or equal to 1 kilo-- regardlessof maternal history

B. If VZIG is given, the incubation period is extended by one week, or from the 10th through the 28th day after exposure.

1. To be effective, VZIG is given within 96 hours and preferably within first 48 hours.

2. Given IM 125u/10kg of body weight.

3. VZIG only modifies varicella; it does not necessarily prevent disease.

IX. TRANSPORTATION OF PATIENTS WITHIN THE FACILITY

A. All open lesions must be covered and a mask worn by patients transported to ancillary departments.

B. Infants in isolation must be transported in an isolette.

C. Arrange with the ancillary departments for patient coverage by immune staff.

D. Any patient newly diagnosed with varicella will have their family members or staff member pick up their prescriptions for them and they will leave the hospital directly from their isolation room.

X. DOCUMENTATION

A. Document time, date, appearance and placement of vesicles.
B. Removal of isolation status depends on the patient's vesicles being completely crusted or no new vesicles for 72 hours.

C. If infected or exposed patients are placed in the same room (cohorted), note time and date initiated and ended.

XI. VARICELLA VACCINE

A. Administration.

1. Varivax is indicated for vaccination against varicella in individuals 12 months of age or older. Vaccination with Varivax may not result in the protection of all healthy, susceptible children, adolescents, and adults. Currently, the vaccine will **only be offered to healthcare workers with a documented negative varicella titer.** (<0.79 is negative, >1.00 is positive).

B. Contraindications

1. A history of hypersensitivity to any component of the vaccine, including gelatin.

2. A history of anaphylactoid reaction to neomycin.

3. Individuals with blood dyscrasias, leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic systems.

4. Individuals with the following conditions: Active, untreated tuberculosis, primary or acquired immunodeficiency states, any febrile respiratory illness, any active febrile infection, or those individuals receiving immunosuppressive therapy.

5. Individuals who have received a blood or plasma transfusion, immune globulin or VZIG within the previous five months.

6. Pregnancy. Pregnancy is to be avoided for three months after vaccination.

C. Precautions

1. Adequate treatment provisions, including epinephrine injection (1:1000) should be immediately available for immediate use should an anaphylactoid reaction occur.

2. Avoid the use of salicylates for six weeks after administration of Varivax

3. Following administration of Varivax, any immune globulin including VZIG should not be given for two months thereafter unless its use outweighs the benefits of vaccination.

4. Vaccine recipients should avoid close contact with susceptible high risk individuals for 28 days after vaccination.

D. STORAGE and RECONSTITUTION

1. The vaccine must be stored frozen at an average temperature of (+5) degrees Fahrenheit. The diluent supplied with the vaccine should be stored separately at room temperature or in the refrigerator. Do not substitute other diluents.

2. Daily freezer temperatures will be recorded, as per policy, to verify maintenance at the appropriate temperature.

3. To reconstitute the vaccine, first withdraw 0.7 ml. of diluent into the syringe to be used for reconstitution. Inject all the diluent in the syringe into the vial of lyophilized vaccine and gently agitate to mix thoroughly. Withdraw the entire contents into a syringe, change the needle, and inject the total volume into the outer aspect of the upper arm or the anterolateral thigh.

4. Discard if vaccine is not used within 30 minutes. DO NOT refreeze.

E. DOSAGE and ADMINISTRATION

1. Adolescents and adults 13 years of age and older should receive a 0.5 ml. dose administered subcutaneously at elected date and a second 0.5 ml. dose 4 to 8 weeks later. The outer aspect of the upper arm (deltoid) is the preferred site of injection.

2. The vaccine will be offered to titer-confirmed susceptible healthcare workers. Susceptible civilian employees that elect NOT to receive the vaccine will not be compensated if ordered off duty from day 10 -21 after a documented occupational exposure to varicella.